

Appl. No. 10/010,586
Amdt. dated 5/25/05
Reply to Office Action of 3/10/05

PATENT
Docket: 010496

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claim 1 (Currently amended): A method comprising:
 accumulating pilot symbols of a first wireless signal;
 accumulating non-pilot symbols of the first wireless signal;
selecting a weight factor from a lookup table, the weight factor comprising a number of pilot symbols in the accumulated pilot symbols multiplied by a constant; and
 calculating a weighted sum of the accumulated pilot symbols and the accumulated non-pilot symbols using the selected weight factor to estimate power of the first wireless signal.

Claim 2 (Original): The method of claim 1, wherein accumulating pilot symbols comprises coherently accumulating a number of pilot symbols corresponding to a slot by summing each of the number of pilot symbols and squaring the sum of the number of pilot symbols.

Claim 3 (Original): The method of claim 2, wherein accumulating the non-pilot symbols comprises non-coherently accumulating a number of non-pilot symbols corresponding to a slot by squaring each of the number of non-pilot symbols and summing the squares of the number of non-pilot symbols.

Claim 4 (Original): The method of claim 1, wherein accumulating the non-pilot symbols comprises non-coherently accumulating a number of non-pilot symbols corresponding to a slot by squaring each of the number of non-pilot symbols and summing the squares of the number of non-pilot symbols.

Claim 5 (Original): The method of claim 1, further comprising comparing the weighted sum to a target value and generating a power control signal based on the comparison.

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Claim 6 (Original): The method of claim 5, further comprising controlling transmission power of a wireless communication device based on the power control signal.

Claim 7 (Original): The method of claim 5, further comprising controlling transmission power of a base station based on the power control signal.

Claim 8 (Original): The method of claim 5, further comprising wirelessly communicating a second wireless signal to control transmission power of a wireless communication device, wherein the second wireless signal includes the power control signal.

Claim 9 (Original): The method of claim 5, further comprising wirelessly communicating a second wireless signal to control transmission power of a base station, wherein the second wireless signal includes the power control signal.

Claim 10 (Currently amended): The method of claim 1, further comprising determining a weight factor and calculating the weighted sum by summing the accumulated pilot symbols with a result of the weight factor multiplied by the accumulated non-pilot symbols.

Claim 11 (Canceled).

Claim 12 (Currently amended): The method of claim 14, wherein the constant is equal to approximately 0.5.

Claim 13 (Canceled).

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Claim 14 (Currently amended): A method comprising:
accumulating pilot symbols of a first wireless signal;
accumulating non-pilot symbols of the first wireless signal;
generating a weight factor using an algorithm, the weight factor comprising a number of
pilot symbols in the accumulated pilot symbols multiplied by a constant; and
calculating a weighted sum of the accumulated pilot symbols and the accumulated
non-pilot symbols using the generated weight factor to estimate power of the first wireless signal
~~The method 11, wherein determining the weight factor comprises generating the weight factor~~
~~using an algorithm.~~

Claim 15 (Original): The method of claim 1, wherein accumulating non-pilot symbols of the first wireless signal comprises separately accumulating a first number of non-pilot symbols corresponding to a slot and accumulating a second number of non-pilot symbols corresponding to the slot.

Claim 16 (Original): The method of claim 15, wherein accumulating the first number of non-pilot symbols corresponding to the slot comprises coherently accumulating the first number of non-pilot symbols corresponding to the slot, and wherein accumulating the second number of non-pilot symbols corresponding to the slot comprises non-coherently accumulating the second number of non-pilot symbols corresponding to the slot.

Claim 17 (Currently amended): A computer-readable medium carrying program code that when executed,

accumulates pilot symbols of a first wireless signal;
accumulates non-pilot symbols of the first wireless signal;
selects a weight factor from a lookup table, the weight factor comprising a number of pilot
symbols in the accumulated pilot symbols multiplied by a constant; and
calculates a weighted sum of the accumulated pilot symbols and the accumulated non-pilot symbols to estimate power of the first wireless signal.

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Claim 18 (Original): The computer readable medium of claim 17, wherein the program code when executed:

accumulates pilot symbols by coherently accumulating a number of pilot symbols corresponding to a slot by summing each of the number of pilot symbols and squaring the sum of the number of pilot symbols, and

accumulates non-pilot symbols by non-coherently accumulating a number of non-pilot symbols corresponding to a slot by squaring each of the number of non-pilot symbols and summing the squares of the number of non-pilot symbols.

Claim 19 (Currently amended): An apparatus comprising:

a receiver that receives a wireless signal,
a demodulator that demodulates individual chips of the wireless signal,
a symbol generator that groups results of the demodulation into control symbols, wherein the control symbols include pilot symbols and non-pilot symbols, and
an estimator that calculates an estimate of the power of the wireless signal by separately accumulating the pilot symbols and the non-pilot symbols and calculating a weighted sum of the accumulated pilot symbols and accumulated non-pilot symbols using a weight factor comprising a number of pilot symbols in the accumulated pilot symbols multiplied by a constant,
an antenna coupled to the receiver,
a rotator that adjusts the frequency of the wireless signal prior to demodulation, and
a digital signal processor that processes the control symbols.

Claim 20 (Canceled).

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Claim 21 (Currently amended): The apparatus of claim 19, further An apparatus comprising:

a receiver that receives a wireless signal,

a demodulator that demodulates individual chips of the wireless signal,

a symbol generator that groups results of the demodulation into control symbols, wherein the control symbols include pilot symbols and non-pilot symbols,

an estimator that calculates an estimate of the power of the wireless signal by separately accumulating the pilot symbols and the non-pilot symbols and calculating a weighted sum of the accumulated pilot symbols and accumulated non-pilot symbols using a weight factor comprising a number of pilot symbols in the accumulated pilot symbols multiplied by a constant,

a comparator that compares the estimate to a target value to determine whether the power of the wireless signal should be increased or decreased, and

a power command generator that generates a command signal to adjust the power of the wireless signal.

Claim 22 (Original): The apparatus of claim 21, further comprising a transmitter that transmits a second signal to instruct a device that sent the first signal to adjust its power according to the command signal.

Claim 23 (Currently amended): An The apparatus of claim 19, wherein the apparatus that forms part of a base station in a wireless communication system comprising:

a receiver that receives a wireless signal,

a demodulator that demodulates individual chips of the wireless signal,

a symbol generator that groups results of the demodulation into control symbols, wherein the control symbols include pilot symbols and non-pilot symbols,

an estimator that calculates an estimate of the power of the wireless signal by separately accumulating the pilot symbols and the non-pilot symbols and calculating a weighted sum of the accumulated pilot symbols and accumulated non-pilot symbols using a weight factor comprising a number of pilot symbols in the accumulated pilot symbols multiplied by a constant,

Claim 24 (Original): The apparatus of claim 19, wherein the apparatus forms part of a wireless communication device in a wireless communication system.

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Claim 25 (Original): The apparatus of claim 19, further comprising:

a number demodulators that demodulate individual chips of the wireless signal received via a number of paths,

a number of symbols generators that group results of demodulations into control symbols, wherein the control symbols include pilot symbols and non-pilot symbols, and

a number of estimators that respectively calculate estimates of the power of the wireless signal corresponding to each of the number of paths by accumulating the pilot symbols.

Claim 26 (Original): The apparatus of claim 25, further comprising:

a register that stores and combines the estimates; and

a comparator that compares the combined estimates to a target value to determine whether the power of the wireless signal should be increased or decreased.

Claim 27 (Currently amended): A wireless communication system comprising:

a wireless communication device that sends a first signal encoded with pilot and non-pilot symbols; and

a base station that receives the first signal, and estimates power of the first signal by separately accumulating the pilot symbols and the non-pilot symbols and calculating a weighted sum of the accumulated pilot and non-pilot symbols, including selecting a weight factor from a lookup table, the weight factor comprising a number of pilot symbols in the accumulated pilot symbols multiplied by a constant.

Claim 28 (Original): The wireless communication system of claim 27, wherein the base station compares the estimated power of the first signal to a target value and sends a second signal back to the wireless communication device to adjust transmit power of the wireless communication device accordingly.

Claim 29 (Currently amended): A wireless communication system comprising:

a base station that sends a first signal encoded with pilot and non-pilot symbols; and

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a wireless communication device that receives the first signal, and estimates power of the first signal by separately accumulating the pilot symbols and the non-pilot symbols and calculating a weighted sum of the accumulated pilot and non-pilot symbols, including selecting a weight factor from a lookup table, the weight factor comprising a number of pilot symbols in the accumulated pilot symbols multiplied by a constant.

Claim 30 (Original): The wireless communication system of claim 29, wherein the wireless communication device compares the estimated power of the first signal to a target value and sends a second signal back to the base station to adjust transmit power of the base station accordingly.

Claim 31 (New): A computer-readable medium carrying program code that when executed, accumulates pilot symbols of a first wireless signal; accumulates non-pilot symbols of the first wireless signal; generates a weight factor using an algorithm, the weight factor comprising a number of pilot symbols in the accumulated pilot symbols multiplied by a constant; and calculates a weighted sum of the accumulated pilot symbols and the accumulated non-pilot symbols to estimate power of the first wireless signal.

Claim 32 (New): A wireless communication system comprising:

a wireless communication device that sends a signal encoded with pilot and non-pilot symbols; and a base station that receives the signal, and estimates power of the signal by separately accumulating the pilot symbols and the non-pilot symbols and calculating a weighted sum of the accumulated pilot and non-pilot symbols, including generating a weight factor using an algorithm, the weight factor comprising a number of pilot symbols in the accumulated pilot symbols multiplied by a constant.

Claim 33 (New): A wireless communication system comprising:

a base station that sends a signal encoded with pilot and non-pilot symbols; and a wireless communication device that receives the signal, and estimates power of the signal by separately accumulating the pilot symbols and the non-pilot symbols and calculating a

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weighted sum of the accumulated pilot and non-pilot symbols, including generating a weight factor using an algorithm, the weight factor comprising a number of pilot symbols in the accumulated pilot symbols multiplied by a constant.